DOCUMENT RESUME

ED 078 069 TM 002 888

TITLE	Development of USES Aptitude Test Battery for Manager, Beauty Shop (per. ser.)-187.168.
INSTITUTION	Manpower Administration (DOL), Washington, D.C. U.S. Employment Service.
REPORT NO	TR-S-48
PUB DATE	Feb 72
NOTE	17p.
EDRS PRICE	MF-$0.65 HC-$3.29
DESCRIPTORS	*Aptitude Tests; Cosmetology; *Cutting Scores; Evaluation Criteria; Job Applicants; *Job Skills; *Managerial Occupations; Norms; Occupational Guidance; *Personnel Evaluation; Test Reliability; Test Validity
IDENTIFIERS	Beauty Shop Managers; GATB; *General Aptitude Test Battery

ABSTRACT

The United States Training and Employment Service General Aptitude Test Battery (GATB), first published in 1947, has been included in a continuing program of research to validate the tests against success in many different occupations. The GATB consists of 12 tests which measure nine aptitudes: General Learning Ability; Verbal Aptitude; Numerical Aptitude; Spatial Aptitude; Form Perception; Clerical Perception; Motor Coordination; Finger Dexterity; and Manual Dexterity. The aptitude scores are standard scores with 100 as the average for the general working population, and a standard deviation of 20. Occupational norms are established in terms of minimum qualifying scores for each of the significant aptitude measures which, when combined, predict job performance. Cutting scores are set only for those aptitudes which aid in predicting the performance of the job duties of the experimental sample. The GATB norms described are appropriate only for jobs with content similar to that shown in the job description presented in this report. A description of the validation sample and a personnel evaluation form are also included. (AG)

FILMED FROM BEST AVAILABLE COPY

F-LAB
TM

S-48

ED 078069

TM 002 888

U.S. DEPARTMENT OF HEALTH
EDUCATION & WELFARE
NATIONAL INSTITUTE OF
EDUCATION
THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL NATIONAL INSTITUTE OF EDUCATION POSITION OR POLICY

February 1972

U.S. Employment Service
Technical Report
S-48

Development of USES

APTITUDE TEST
BATTERY FOR

MANAGER, BEAUTY SHOP

(per. ser.)
187.168

U.S. DEPARTMENT OF LABOR
Manpower Administration

Technical Report on Development of USES Aptitude Test Battery

For

Manager, Beauty Shop (per. ser.) 187.168

S-48

(Developed in cooperation with the
North Carolina
State Employment Service)

Manpower Administration
U. S. Department of Labor
February 1972

FOREWORD

The United States Employment Service General Aptitude Test Battery (GATB) was first published in 1947. Since that time the GATB has been included in a continuing program of research to validate the tests against success in many different occupations. Because of its extensive research base the GATB has come to be recognized as the best validated multiple aptitude test battery in existence for use in vocational guidance.

The GATB consists of 12 tests which measure 9 aptitudes: General Learning Ability, Verbal Aptitude, Numerical Aptitude, Spatial Aptitude, Form Perception, Clerical Perception, Motor Coordination, Finger Dexterity, and Manual Dexterity. The aptitude scores are standard scores with 100 as the average and a standard deviation of 20.

Occupational norms are established in terms of minimum qualifying scores for each of the significant aptitude measures which in combination predict job performance. For any given occupation, cutting scores are set only for those aptitudes which contribute to the prediction of performance of the job duties of the experimental sample. It is important to recognize that another job might have the same job title but the job content might not be similar. The GATB norms described in this report are appropriate for use only for jobs with content similar to that shown in the job description included in this report.

GATB #2845

Development of USES Aptitude Test Battery

For

Manager, Beauty Shop (per. ser.) 187.168-062

S-48

This report describes research undertaken for the purpose of developing General Aptitude Test Battery (GATB) norms for the occupation of Manager, Beauty Shop (per. ser.) 187.168-062.

The following norms were established:

GATB Aptitudes	Minimum Acceptable GATB Scores
G - General Learning Ability	75
P - Form Perception	80
Q - Clerical Perception	95
K - Motor Coordination	95

RESEARCH SUMMARY

Sample:

The total number of workers was 51. Of these six were Spanish American and the remainder of the sample were nonminority group members; 49 were females, 2 were males.

Criterion:

Supervisory Ratings

Design:

Concurrent (test and criterion data were collected at about the same time).

Minimum aptitude requirements were determined on the basis of a job analysis and statistical analyses of aptitude mean scores, standard deviations, aptitude-criterion correlations and selective efficiencies.

Concurrent Validity:

Phi coefficient = .42 ($P/2 < .005$)

Effectiveness of Norms:

Only 65% of the nontest-selected individuals used for this study were good performers; if they had been test-selected with the above norms, 83% would have been good performers. 35% of the nontest-selected individuals used for this study were poor performers; if they had been test-selected with the above norms, only 17% would have been poor performers. The effectiveness of the norms is shown in Table 1.

TABLE 1
Effectiveness of Norms

	Without Tests	With Tests
Good Performers	65%	83%
Poor Performers	35%	17%

SAMPLE DESCRIPTION

Size:

N = 51

Sex Composition:

49 were female; 2 were male

Minority Group Composition:

Of the total number of workers six were Spanish Americans and the remainder were nonminority group members.

Occupational or Educational Status:

Employed workers.

Work or Educational Setting:

Workers were employed by the LaMarick Beauty Systems, Inc., in Florida, Georgia, North Carolina, South Carolina, Tennessee, and Virginia.

Selection Requirements:

Education: High school completion preferred but not essential.

Previous Experience: None

Tests: None

Principal Activities:

The job duties are comparable to those shown in the job description in the Appendix.

Minimum Experience:

All individuals in the sample had at least 12 months' job experience.

TABLE 2

Means, Standard Deviations (SD), Ranges and Pearson Product-Moment Correlations with the Criterion (r) for Age, Education, Experience, and Cultural Exposure

	Mean	SD	Range	r
Age (years)	42.9	10.9	21-64	.152
Education (years)	11.5	.9	8-12	-.029
Plant Experience (months)	47.5	37.6	13-165	.431**
Total Experience (months)	80.4	62.8	13-363	.205
Cultural Exposure	2.4	1.1	1-5	-.216

**Significant at the .01 level

EXPERIMENTAL TEST BATTERY

All 12 tests of the GATB, B-1002B, were administered during April and May 1970.

CRITERION

The criterion data consisted of supervisory rank-order ratings of shop production and the potential to get a typical shop to produce. Each area supervisor ranked the managers in his area in conference with the vice-president of the company to ensure equivalent rating standards. The vice-president then merged the area supervisor's rankings into the final ranking. Travel, time, and the added expenses of special area supervisor meetings precluded rerating and therefore the determination of rating-rerating reliability.

Rating Scale:

Two altered forms of the USES Alternation Ranking Form, SP-25, were used. The first asked for the Managers to be rated on the actual production of their shop and the second for the managers' potential to produce under typical conditions.

Reliability:

Neither the stability over time nor the internal consistency of the ratings could be determined. However, the Pearson Product-Moment correlation between the two rankings was .91, therefore, the two were combined as the final criterion to increase reliability.

Criterion Distribution:

Actual Range:	12-188
Mean:	100.0
Standard Deviation:	36.5

Criterion Dichotomy:

The criterion distribution was dichotomized into low and high groups by placing 35% of the sample in the low group to correspond with the percentage of individuals considered unsatisfactory or marginal by the supervisor. Workers in the high criterion group were designated as "good performers" and those in the low group as "poor performers." The criterion critical score is 86.

APTITUDES CONSIDERED FOR INCLUSION IN THE NORMS

Aptitudes were chosen for tryout in the norms on the basis of qualitative and statistical results shown in Tables 3 and 4. Aptitudes not judged irrelevant are selected for trial norms when significantly correlated with a criterion or when judged to have critical importance, or when they meet any two of the following criteria: (1) judged important, (2) relatively high mean, (3) relatively low standard deviation. A relatively high mean or low standard deviation may indicate some sample preselection. Table 5 summarizes these factors and shows the aptitudes selected.

TABLE 3

Qualitative Analysis

(Based on the job analysis, the aptitudes indicated appear to be important to the work performed.)

Aptitude	Rationale
G-General Learning Ability	Necessary in learning and understanding the necessary duties and policies and in using judgment to make management decisions.
V-Verbal Aptitude	Necessary in understanding written and oral communications.
N-Numerical Aptitude	Necessary in calculating charges, wages, and orders.
S-Spatial Aptitude	Necessary in determining if a picture of a hairstyle would look appropriate on a given client.
P-Form Perception	Necessary in perceiving texture of hair and facial features in order to advise customer on beauty services.
Q-Clerical Perception	Necessary in keeping records of charges, wages and orders.

TABLE 4

Means, Standard Deviations (SD), Ranges and Pearson Product-Moment Correlations with the Criterion (r) for the Aptitudes of the GATB: N = 51

Aptitude	Mean	SD	Range	r
G - General Learning Ability	91.8	13.5	63-128	.150
V - Verbal Aptitude	85.0	11.4	74-125	.128
N - Numerical Aptitude	92.1	14.7	59-124	.155
S - Spatial Aptitude	94.3	17.9	58-147	.123
P - Form Perception	99.4	21.3	53-144	.031
Q - Clerical Perception	107.3	12.1	81-128	.195
K - Motor Coordination	102.8	15.8	49-128	.312*
F - Finger Dexterity	92.3	19.3	57-165	-.037
M - Manual Dexterity	99.8	19.6	32-155	.130

*Significant at the .05 level

TABLE 5

Summary of Qualitative and Quantitative Data

Type of Evidence	Aptitudes G	V	N	S	P	Q	K	F	M
"Important" on Basis of Job Analysis	X	X	X	X	X	X			
"Irrelevant" on Basis of Job Analysis									
Relatively High Mean					X	X	X		X
Relatively Low Standard Deviation	X	X	X			X			
Significant Correlation with Criterion							X		
Aptitudes Selected for Trial Norms	G	V	N		P	Q	K		

DERIVATION AND VALIDITY OF NORMS

Final norms were derived on the basis of the degree to which trial norms consisting of various combinations of aptitudes G, V, N, P, Q, and K at trial cutting scores were able to differentiate between the 65% of the sample considered to be good performers and the 35% of the sample considered to be poor performers. Trial cutting scores at five-point intervals approximately one standard deviation below the mean are tried because this will eliminate about one-third of the sample with three-aptitude norms. For four-aptitude trial norms, cutting scores of slightly less than one standard deviation below the mean will eliminate about one-third of the sample; for two-aptitude trial norms, minimum cutting scores of slightly more than one standard deviation below the mean will eliminate about one-third of the sample. The phi coefficient was used as a basis for comparing trial norms. Norms of G-75, P-80, Q-95 and K-95 provided optimum differentiation for the occupation of Manager, Beauty Shop (per. ser.) 187.168-062.

The validity of these norms is shown in Table 6 and is indicated by a phi coeffecient of .42 (statistically significant at the .005 level).

TABLE 6

Concurrent Validity of Test Norms

G-75, P-80, Q-95, and K-95

	Nonqualifying Test Scores	Qualifying Test Scores	Total
Good Performers	8	25	33
Poor Performers	13	5	18
Total	21	30	51

Phi coefficient = .42
Significance level = P/2 < .005

Chi square (Yates' corrected) = 9.2

DETERMINATION OF OCCUPATIONAL APTITUDE PATTERN

Although the specific norms established for this occupation did not meet all the requirements for incorporation into OAP-29, which is shown in the 1970 edition of Section II of the GATB Manual, this occupation was entered into the OAP as a "double asterisk" occupation. A phi coeffecient of .24 is obtained with OAP-29 norms of V-90, Q-100, and K-90.

A-P-P-E-N-D-I-X

ALTERNATION RANKING FORM - NUMBER 1

(For Beauty Shop Managers Used In Aptitude Test Development Studies)

Ranking Instructions

1. The attached page has all of the Managers to be ranked in this study listed in the left-hand column.

2. Select the Manager you consider as ranking highest in the production of her shop. Write her name on the top line (labeled "1 - Highest") of the Rank Order column, and cross her name off the list.

3. From the remaining names, select the Manager you feel ranks lowest, and write her name on the line at the bottom of the Rank Order column where it says "1 - Lowest". Now cross her name off the list.

4. Continue by alternately selecting the next highest and next lowest individuals remaining on the Manager list until all names have been crossed out. For example, if you have listed eight Managers, four of them should appear at the top of the Rank Order column and four at the bottom. The middle spaces would be left blank.

5. Place an X after the first person in the ranking that you would consider having a poor producing shop. This would mean that all of the Managers <u>at</u> or <u>below</u> the X have low producing shops while those <u>above</u> the X have high producing shops.

The fact that you rate an individual as lowest does not necessarily mean that you regard his performance as unsatisfactory. Your rating merely denotes how you would rank him in relation to others in the particular group.

ALTERNATION RANKING FORM - NUMBER 2

(For Beauty Shop Managers Used in Aptitude Test Development Studies)

Ranking Instructions

1. The attached page has all of the Managers to be ranked in this study listed in the left-hand column.

2. Select the Manager you consider to have the highest potential. This means that each Manager should be judged on how you feel she would handle a typical salon, staffed by typical operators after she has had enough experience to be fully trained and if she really applied herself. After the Manager with highest potential is selected, her name should be entered on the top line (labeled "1 - Highest") of the Rank Order column, and cross her name off the list.

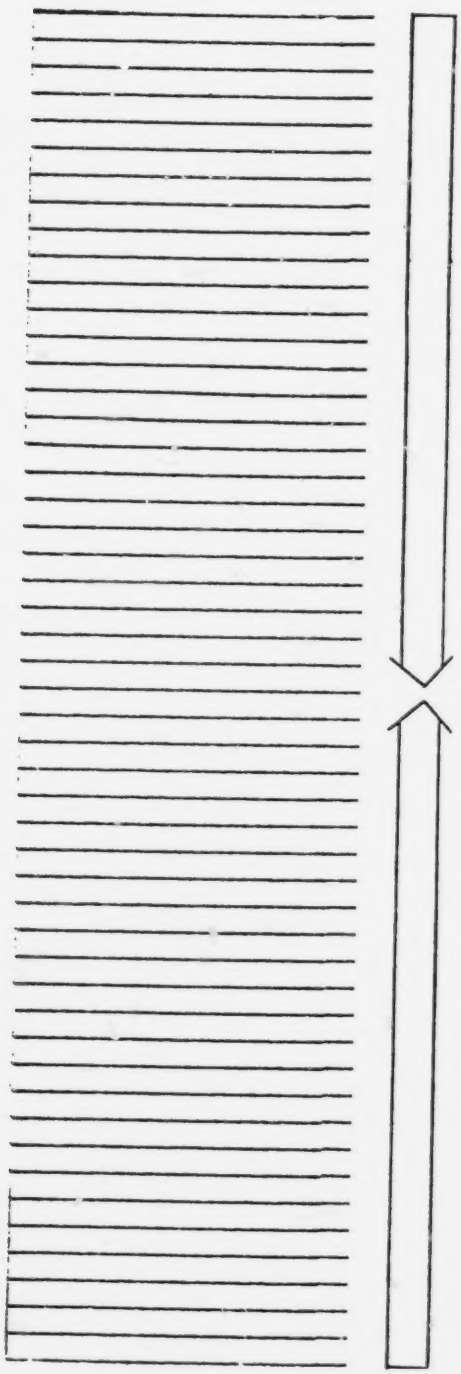
3. From the remaining names, select the Manager you feel ranks lowest in potential, and write her name on the line at the bottom of the Rank Order column where it says "1 - Lowest". Now cross her name off the list.

4. Continue by alternately selecting the next highest and the next lowest individual remaining on the Manager list until all names have been crossed off.

5. Place an X after the first person in the ranking that you would consider "lacking the potential" to be a good Manager. This would mean that all of the Managers <u>at</u> or <u>below</u> the X are "lacking the potential" to be good Managers while those <u>above</u> the X "have sufficient potential" to be good Managers.

The fact that you rate an individual as lowest does not necessarily mean that you regard his performance as unsatisfactory. Your rating merely denotes how you would rank him in relation to others in the particular group.

MANAGER LIST



RANK ORDER

	RATING
1-Highest	
2-Next Highest	
3-Next Highest	
4-Next Highest	
5-Next Highest	
6-Next Highest	
7-Next Highest	
8-Next Highest	
9-Next Highest	
10-Next Highest	
11-Next Highest	
12-Next Highest	
13-Next Highest	
14-Next Highest	
15-Next Highest	
16-Next Highest	
17-Next Highest	
18-Next Highest	
19-Next Highest	
20-Next Highest	
21-Next Highest	
22-Next Highest	
23-Next Highest	
24-Next Highest	
25-Next Highest	
26-Next Highest	
25-Next Lowest	
24-Next Lowest	
23-Next Lowest	
22-Next Lowest	
21-Next Lowest	
20-Next Lowest	
19-Next Lowest	
18-Next Lowest	
17-Next Lowest	
16-Next Lowest	
15-Next Lowest	
14-Next Lowest	
13-Next Lowest	
12-Next Lowest	
11-Next Lowest	
10-Next Lowest	
9-Next Lowest	
8-Next Lowest	
7-Next Lowest	
6-Next Lowest	
5-Next Lowest	
4-Next Lowest	
3-Next Lowest	
2-Next Lowest	
1-Lowest	

Rater's Signature_____ Position_____

Date_____

February 1972 S-48

FACT SHEET

Job Title:

Manager, Beauty Shop (per. ser.) 187.168-062

Job Summary:

Supervises and coordinates the activities of workers engaged in providing beauty services. Keeps records, requisitions supplies, and interviews, schedules, and advises customers seeking beauty services.

Work Performed:

Selects, hires, and discharges employees of beauty shop. Informs employees of company methods, policy, and procedures. Supervises and coordinates activities of the employees. Interviews customers to determine beauty services desired. Advises customer concerning style and color of hair according to criteria, such as texture of hair and facial features. Schedules customer with employee capable of providing desired services. Keeps records of customer accounts, employees' wages, and supplies. Sees that equipment and facilities are properly maintained. Schedules hours of workers to meet demands of customers. May provide beauty services.

Effectiveness of Norms:

Only 65% of the nontest-selected individuals used for this study were good performers; if they had been test-selected with the above norms, 83% would have been good performers. 35% of the nontest-selected individuals used for this study were poor performers; if they had been test-selected with the above norms, only 17% would have been poor performers.

Applicability of S-48 Norms:

The aptitude test battery is applicable to jobs which include a majority of the job duties described above.

GPO 927-408